From:	McKenna, Jim
To:	Eric Blischke/R10/USEPA/US@EPA
Cc:	Chip Humphrey/R10/USEPA/US@EPA; rjw@nwnatural.com; ricka@bes.ci.portland.or.us; Jennifer Woronets; Ashton, David
Subject:	Initial review of EPA's response to fish tissue TRVs
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Eric,

The LWG's technical team has completed an initial review of EPA's response to the fish tissue TRV reconciliation tables. Two significant concerns remain that could hold-up resolution of the TRV methodology and hence the RI deliverable data. The two key issues are:

1. **Larvae Studies:** Inclusion of the Berlin et al. (1981) and Broyles and Noveck (1979) studies is inconsistent with the LWG/EPA agreed-upon tissue TRV methodology. These studies were conducted on larvae from fish that were collected from the Great Lakes in the 1970s. Berlin et al. measured egg PCB and DDT residues (prior to initiating their experiment) and found them to be elevated (7.6 and 3.8 µg/g, respectively). Broyles and Noveck did not measure egg residues but they estimated the egg PCB residue to be in the 3-11 ppm range (which by the way turned out to be consistent with the Berlin et al. measurements that were made a couple of years later). Therefore, the controls in these studies were contaminated, and the studies are unacceptable because field collection of maternal fish resulted in contaminated test organisms. EPA's argument that the experimental exposure regime was valid has no bearing on the factor that necessitates rejecting these studies.

2. **Behavioral Studies:** The information that you provided is not sufficient as a blanket justification for including studies reporting behaviors affecting predator-prey relationships, avoidance behavior, changes in feeding behavior and studies reporting changes in swimming activity. For example, your justification for including predator-prey behavior is the assertion that Weis et al. (2000) demonstrated that mercury exposure reduced prey capture ability of mummichogs, and that reduced prey capture ability reduced growth (and longevity). We have not yet completed our evaluation of Weis et al. (2000), but we agree in principle that if it does establish a direct linkage between chemical exposure and a (predation) behavioral response, **and** between that behavioral response and reduced growth, then it would be appropriate to use the behavioral effect threshold from Weis et al. (2000) in developing a fish tissue TRV for mercury. It might also provide justification for accepting other predation effect thresholds, particularly for other similarly designed mercury-mummichog studies. It does not provide blanket justification for including predation effect thresholds for other study designs, stressors or receptors. Furthermore, anecdotally reported behavioral responses should not be accepted. Therefore, EPA's response to the fish tissue TRV reconciliation tables does not provide technical resolution to the issue of which if any studies reporting these four types of behavioral response should be included.

We are still in the process of reviewing your study-specific comments, but our initial look didn't identify any additional key concerns in those comments. Obviously, in order to keep the RI on schedule we need to resolve the remaining fish tissue TRV issues as soon as possible. I look forward to our conference call on this matter this Friday at 1:00 with me, you, Burt, John and Bob. We'll use the LWG conference line Non Responsive

Thanks,

Jim McKenna

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Weis et. al. , 2000. Predator/prey Interactions: A Link Between the Individual Level and Both Higher and Lower Level Effects of Toxicants in Aquatic Ecosystems. Journal of Aquatic Ecosystem Stress and Recovery 7: pp 145–153.